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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,065	12/04/2003	Jitendra Mohan	P05748 (NATI15-05748)	7964
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			08/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/728,065

Applicant(s)

MOHAN, JITENDRA

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/27/07 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 4-7, 9-10, 12-16, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kimmitt (U.S. Patent Application Publication No. 2003/0175037).

Regarding claims 1, 9, and 15, Kimmitt teaches a light source (reference numeral 34, 36, 38, 40 in Figure 5) capable of emitting light at a variable output power to transmit data at a given data rate; a monitor diode (reference numeral 58 in Figure 6) positioned to receive at least a portion of the emitted light, the monitor diode comprising a PIN diode (paragraph [0030]) having a bandwidth only partially overlapping a lower end of a data transmission spectrum for the data rate (paragraph [0009]; paragraph [0039]); and a controller (reference numeral 42 in Figure 5)

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capable of determining an average output power of the light source based on an output signal of the monitor diode (paragraph [0031]), comparing the average output power to a target value (i.e. the “quadrature point” throughout), and adjusting the variable output power of the light source by: incrementing or decrementing a logical 1 level current based on the comparison of the average output power to the target value (paragraph [0031]; paragraph [0032]); and determining a modulation current for the light source using the incremented or decremented logical 1 level current(paragraph [0031]; paragraph [0032]).

Regarding claims 2, 10, and 16, Kimmitt teaches that the bandwidth of the monitor diode is substantially less than the data rate (paragraph [0009]; paragraph [0039]).

Regarding claims 4, 12, and 18, the monitor diode of Kimmitt clearly functions as a low pass filter operating on the light emitted by the light source particularly when one considers the other elements to which it is attached (reference numeral 58, 60, 62, 64, 66 in Figure 6).

Regarding claims 5, 13, and 19, Kimmitt teaches peak detectors with decay capable of detecting a peak-to-peak amplitude of the output signal of the monitor diode, wherein the peak-to-peak amplitude is directly representative of optical modulation amplitude for the light source (paragraph [0052]).

Regarding claims 6, 14, and 20, Kimmitt teaches that the controller is capable of employing output signals from the peak detectors to control optical modulation amplitude or extinction ratio of the light source (paragraph [0051]).

Regarding claim 7, Kimmitt teaches that the system is included in an optical subassembly (reference numeral 34, 36, 38, 40 in Figure 5), the optical subassembly adapted for transmission of data over an optical transmission medium (i.e. the output of reference numeral 40 in Figure 5).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3, 11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimmitt.

Regarding claim 3, 11, and 17, Kimmitt differs from the claimed invention in that Kimmitt fails to specifically teach that the bandwidth of the monitor diode is less than or equal to between one tenth and one fortieth of the data rate. However, Kimmitt suggests as much via disclosure of a “low bandwidth photo detector” (paragraph [0009]; paragraph [0039]). Furthermore, as a matter of design choice, one skilled in the art would clearly have recognized the ability to select the bandwidth of Kimmitt’s low bandwidth photodetector so that the bandwidth of the monitor diode is less than or equal to between one tenth and one fortieth of the data rate. One skilled in the art would have been motivated to do so in order to detect the various low bandwidth dither signals employed by Kimmitt. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have selected the bandwidth of Kimmitt’s monitor diode so that it is less than or equal to between one tenth and one fortieth of the data rate.

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6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimmitt in view of Kerem (U.S. Patent No. 7,065,303).

Regarding claim 8, Kimmitt differs from the claimed invention in that Kimmitt fails to specifically teach that the optical subassembly is included in a computer, the computer further comprising: a processor coupled to the controller; and a network connection through the optical subassembly to the optical transmission medium. However, Kerem teaches that it is well known in the art to include the optical subassembly is included in a computer (reference numeral 10 in Figure 1), the computer further comprising: a processor (reference numeral 16 in Figure 1) coupled to the controller (reference numeral 54 in Figure 3); and a network connection through the optical subassembly to the optical transmission medium (column 4 lines 35-43; column 5 lines 57-64). One skilled in the art would have been motivated to include the features of Kerem in order to manage, configure, monitor, and control the device of Kimmitt (column 4 lines 35-43 of Kerem). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include the optical subassembly in a computer, the computer further comprising: a processor coupled to the controller; and a network connection through the optical subassembly to the optical transmission medium.

#### ***Response to Arguments***

7. Applicant's arguments filed 07/27/07 have been fully considered but they are not persuasive.

The applicant first argues that the cited prior art fails to specifically teach the claimed monitor diode with a bandwidth overlapping a lower end of the data transmission spectrum for the data rate.. However, the examiner disagrees. Kimmitt clearly teaches that the detector

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detects only a portion of the overall signal (i.e. low bandwidth photodetector) at the lower end of the frequency range of the overall signal. The low frequency dither signals detected in Kimmitt clearly overlap the lower end of the bandwidth of the overall data transmission spectrum.

Next, the applicant argues that Kimmitt fails to specifically teach a controller capable of determining the average output power of the light source based on the output of the monitor diode. However, the examiner disagrees. Kimmitt clearly discloses that when the modulator is operating at the quadrature point, the average power of the modulated optical signal is constant and thus the electrical feedback signal is constant. Kimmitt's controller then works to maintain this constant average output power by maintaining the quadrature point through adjustments to the light source. In doing so the controller is clearly capable of determining what the average output power of the light source.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Agustin Bello  
Primary Examiner  
Art Unit 2613

AB